

REMARKS/ARGUMENTS

Status of the Application

Claims 1-10 are pending and stand rejected. Claims 1 and 7, 8 and 10 have been amended. No new matter has been added to the present application. In view of the foregoing amendments and the following remarks, Applicants respectfully request reconsideration of the present application and a Notice of Allowance.

Claim Rejections – 35 U.S.C. § 102(b)

Claims 1-2, 4 and 6-10 stand rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Sugawara *et al.* (U.S. Pat. No. 6,060,772 and “Sugawara” hereinafter). In light of the foregoing amendments, Applicants respectfully submit that the Examiner’s rejection is overcome because claims 1 and 7 include features that are not disclosed by Sugawara, namely, and as represented by claim 1:

A semiconductor device comprising:

...

a main current electrode, *which is formed by a piece of metal*, arranged near said plurality of semiconductor elements and vertically apart from the surface of the substrate, wherein

each of said plurality of semiconductor elements and said main current electrode are electrically connected, *and wherein said main current electrode bridges from one end of the substrate to an opposite end of the substrate* and is arranged immediately above one of said plurality of semiconductor elements or wiring pattern connected to the one of said plurality of semiconductor elements. (Emphasis added).

Applicants note that Sugawara discloses a power semiconductor module. The module has semiconductor chips that have control electrodes that are connected to wiring patterns formed on a controlling substrate disposed above the semiconductor chips. (Col. 2, ll. 29-38). Applicants respectfully submit that Sugawara fails to disclose a main current electrode that is both “formed by a piece of metal,” and “bridges from one end of the substrate to an opposite end of the substrate” as claimed. The Examiner points to an electrode on substrate 11 of Sugawara as anticipating the main current electrode 13 of the present application. However, and as can be seen in any of Figs. 3 and/or 10 of Sugawara, the electrode on

substrate 11 *does not bridge from one end of a substrate to the opposite end of the substrate*. As can also be seen in Figs. 3 and 10, and more particularly in Fig. 8, the only component in Sugawara that bridges above the semiconductor elements is not an electrode at all, but is instead a substrate (controlling substrate 11). In other words, Sugawara fails to disclose an *electrode that is formed by a piece of metal that bridges from one end of the substrate to the opposite end of the substrate* as claimed.

Furthermore, the controlling substrate 11 of Sugawara is used for feeding a control signal to semiconductor elements, and therefore does not have a main current electrode. As can be seen at col. 6, ll. 31-48 of Sugawara, the substrate 11 has "wiring patterns" (*i.e.*, semiconductor elements) formed thereon, which receive a signal from "specific electrodes." Accordingly, Sugawara fails to disclose *a main current electrode* that bridges from one end of a substrate to the opposite end of the substrate as claimed.

Because Sugawara does not recite all the limitations of claims 1 and 7 as amended, Applicants respectfully submit that Sugawara does not anticipate claim 1 or 7. As claims 2, 4 and 6 ultimately depend from claim 1, and as claims 8-10 ultimately depend from claim 7, Applicants respectfully submit that claims 2, 4, 6 and 8-10 are also not anticipated by Sugawara for the reasons explained above.

Claim Rejections – 35 U.S.C. § 103(a)

Claim 3 stands rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Sugawara in view of Bryan (U.S. Pat. No. 3,735,057 and "Bryan" hereinafter). Claim 5 stands rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Sugawara in view of Dubelloy (U.S. Pat. No. 5,495,889 and "Dubelloy" hereinafter).

Applicants respectfully traverse the Examiner's rejection of claims 3 and 5. As discussed above concerning newly amended claim 1, Sugawara fails to disclose a main current electrode that is both "formed by a piece of metal," and "bridges from one end of the substrate to an opposite end of the substrate" as claimed.

Applicants respectfully submit that both Bryan and Dubelloy fail to cure the deficiencies of Sugawara, as both references are devoid of teachings that would suggest the subject matter of claims 3 and 5 in the context of a semiconductor device having a main current electrode that is both "formed by a piece of metal," and "bridges from one end of the

DOCKET NO.: TIC-0010
Application No.: 10/019,201
Office Action Dated: November 14, 2003

PATENT

substrate to an opposite end of the substrate,” as is the case in independent claim 1, from which claims 3 and 5 ultimately depend. Accordingly, Applicants respectfully submit that claims 3 and 5 patentably define over Sugawara in view of Bryan or Dubelloy, taken alone or in combination.

CONCLUSION

In view of the foregoing amendments and remarks, Applicants respectfully submit that the pending claims patentably define over the prior art. Accordingly, a Notice of Allowance are respectfully requested. In the event that the Examiner believes that the present application is not allowable for any reason, the Examiner is encouraged to contact the undersigned attorney to discuss resolution of any remaining issues.

Respectfully submitted,

Date: February 17, 2004



Christos A. Ioannidi
Registration No. 54,195

Woodcock Washburn LLP
One Liberty Place - 46th Floor
Philadelphia PA 19103
Telephone: (215) 568-3100
Facsimile: (215) 568-3439